

United States Government

Department of Energy

Oak Ridge Office

memorandum

DATE: February 6, 2006

REPLY TO


ATTN OF: EM-94:Kadas

SUBJECT: **ASSESSMENT AND ACTION PLANS FOR DEFENSE NUCLEAR FACILITY
SAFETY BOARD RECOMMENDATION 2004-1, COMMITMENTS 23 AND 25**

TO: Dae Y. Chung, Director, Office of Licensing, EM-24, CLVRLF

Please find attached the Oak Ridge Office (ORO) Environmental Management (EM) final action plans prepared in response to the memoranda dated November 17 and 18, 2005, from Dr. Inés Triay on Commitment 23, Work Planning and Work Control (WP&C); and Commitment 25, Feedback and Improvement (F&I), as identified in the Implementation Plan for the Defense Nuclear Facility Safety Board (DNFSB) Recommendation 2004-1. The attached action plans incorporate comments received from EM-3 on January 26, 2006, and during the 2004-1 WP&C Commitment 23 and F&I Commitment 25 Televideo Conference on January 31, 2006. Also, attached is a compact disk containing the electronic version of the action plans.

If you have any questions, please contact me at (865) 576-0742, Cissy Perkins at (865) 576-2552, or Karen Kadas at (865) 241-2224.


Stephen H. McCracken
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Attachments

cc w/attachments:

T. Evans, EM-3.2, CLVRLF

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Oak Ridge Office – Environmental Management Site Action Plan

Commitment 23, Work Planning and Control DNSFB Recommendation 2004-1

NOTE: Change Control for this Site Action Plan resides with the Assistant Manager for Environmental Management (or designee), with a cc: to EM-3.2.

Executive Summary

Evaluation Process

The November 2005 memorandum from U.S. Department of Energy (DOE) Under Secretary David K. Garman provided criteria review and approach documents (CRADs) to be used to assess the status of field office completion of Commitment 23, "Work Planning and Control," as discussed in the Implementation Plan responding to Defense Nuclear Facilities Safety Board (DNFSB) Recommendation 2004-1. The purpose of this report is to summarize the results of the U.S. Department of Energy (DOE) Oak Ridge Office (ORO) Environmental Management (EM) program evaluation of Commitment 23 and to describe the corrective actions, as necessary, resulting from reviews of these CRADs.

A principle function of an Integrated Safety Management System (ISMS) directly correlates to Commitment 23: to perform work within controls. DOE ORO has in place ORO M100, Oak Ridge Management System Description (MSD) which incorporates the principles of ISMS. Further, the DOE ORO Office of Environmental Management has a Management System Description document which provides a comprehensive high-level description of the roles and responsibilities within the EM organization to manage its work and to manage the contracts under its responsibility. Also incorporating the foundations of ISM, the description of each management system in the EM MSD includes an identification of the requirements associated with that system as well as reference to the processes used by the EM to fulfill those requirements. The EM MSD is consistent with ORO M 100, and it provides the foundation upon which the EM organization can foster a culture of continuous improvement and effectively integrate the ORO safety philosophy into all aspects of work.

In 2005, each DOE ORO organization conducted a self-assessment of continued compliance with ISMS. Specifically, this self assessment included a review of the following scope elements:

- (1) Work scope, organizational structure, and roles and responsibilities are defined and workers understand their specific job functions.
- (2) For assigned work scope and duties, workers are aware of the specific safety concerns that apply to them (vehicles, plant access, emergencies, etc.)
- (3) For assigned work scope and duties, workers are fully aware of the procedures that they must follow with respect to safety and general requirements of their job.
- (4) Oversight processes which ensure that work is implemented in compliance with defined management controls are implemented.
- (5) A system is in place and is functioning for providing consistent feedback relating to safety goals and management expectations, for improving performance, and from providing Lessons Learned.

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- (6) DOE line management provides effective and formal oversight of their contractor ISMS program to ensure that hazards are analyzed, controls are developed and that feedback and improvement programs are in place and effective.

In September 2005, an independent assessment was conducted of the DOE ORO ISMS program as a whole. This independent assessment was an implementation review of the DOE ORO ISMS using Phase II CRADs derived from DOE Handbook 3027-99, ISMS Verification Team Leader's Handbook, and the DOE Implementation Plan in response to Defense Nuclear Facilities Safety Board (DNFSB) Recommendation 2004-1. The results of the previous self assessments and the following objectives were specifically reviewed:

- DOE's procedures and mechanisms should ensure that work is formally and appropriately authorized and performed safely. DOE line managers should be involved in the review of safety issues and concerns and should have an active role in authorizing and approving work and operations.
- DOE procedures and mechanisms ensure that the hazards are analyzed, controls are developed, and feedback and improvement programs are in place and effective. DOE line managers are using these processes effectively, consistent with ORO FRAM requirements.
- High-reliability principles to establish effective ISM implementation are in place.

Both the self-assessments, as well as the independent assessment, determined that ORO, including EM, continued to effectively implement ISM. The independent assessment stated, in part:

"ORO's ISMS implementation has significantly improved since . . . 2003."

"ORO's self-assessments and contractor reviews accurately depict the state of their respective ISM programs."

Additionally, in October and November 2005, DOE ORO EM conducted Operational Readiness Reviews (ORRs) on projects to be completed by each of two prime contractors: Bechtel Jacobs Company, LLC (BJC) and Foster Wheeler Environmental Corporation (FWENC). These ORRs included independent reviews of DOE ORO EM oversight activities. Management Self Assessments were conducted prior to the initiation of the DOE ORRs. Also, a DNFSB visit occurred in November 2005 which resulted in opportunities for improvement.

During the course of these recent reviews, the work planning and control processes utilized by DOE ORO EM and its contractors were thoroughly assessed. As such, in completing the evaluation of the CRADs for Commitment 23, these recent reviews were referenced to demonstrate compliance with each criterion. Corrective actions for issues related to work planning and control resulting from these reviews have also been included.

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A Type B investigation is currently underway to evaluate the causes of a recent event. Corrective actions resulting from this investigation will be added to this Site Action Plan, once they have been identified.

Overall Evaluation Summary

The results of this evaluation determined that DOE-ORO-EM meets the objectives for CRAD-1 and CRAD-2 with opportunities for improvement noted in both CRAD assessment areas. BJC and FWENC were found to meet the objectives of CRAD-3 through CRAD-7 with 8 opportunities for improvement noted. The following table provides the results of this evaluation.

<u>CRAD #</u>	<u>Objective Met</u>	<u>Objective Partially Met</u>	<u>Objective Not Met</u>	<u>Comments</u>
1	X			1 OFI noted
2	X			2 OFIs noted
3	X			No issues noted
4	X			2 OFIs noted (1 BJC, 1 FWENC)
5	X			4 OFIs noted (2 BJC, 2 FWENC)
6	X			2 OFIs noted (2 BJC)
7	X			1 OFI noted (1 BJC)

This evaluation determined that DOE ORO EM, BJC, and FWENC have programs in place to meet the WP&C CRADs when applied to various work (e.g., operations, maintenance, construction/destruction, research and development, etc.) being performed at ORO EM projects, and its oversight. The opportunities for improvement noted by this evaluation were generally not the result of a need to align current programs policies or practice to that of the expectations of improved incorporation of integrated safety management and quality assurance into work planning and control processes, but the reasonable maintenance and continual improvement of these items.

Section I-III contains those actions important to improving the effectiveness of ORO EM work planning and control. These sections include corrective actions taken and/or planned in response to recent ORRs and ISMS reverification as well as those resulting from reviews of these CRADs

SECTION I – DOE Oversight

Performance Objective WPC-1: DOE Work Planning and Control Oversight – The DOE field element has an established process that ensures effective oversight of the contractor's work planning and control process.

Opportunity for Improvement #1

The DOE ORO EM ISM self assessment conducted in July 2005 found that a program is not in place to verify that all EM staff has required training for safe access to the EM work sites.

DOE Action	Deliverable	Due Date	Owner/Org
Staff will be instructed to include Site Access Training requirements in their Individual Development Plans which are expected to be due 2/2006.	Memo from the AMEM to staff re: Site Access Training Policy	9/20/2005 Complete	Director, Technical Support and Assessment Division
An assessment of EM site access training will be conducted and staff notified of deficiencies. Periodic assessments of site access training will be included in the EM self assessment schedules.	Self-assessment of AMEM Training	2/28/2006	Director, Technical Support and Assessment Division

Responsible Manager: DOE ORO EM Technical Support and Assessment Division Manager

Performance Objective WPC-2: DOE Work Planning and Control Oversight – The DOE field element performs effective oversight of the contractor's work planning and control process.

Opportunity for Improvement #1

The ORO EM assessment program focuses primarily on radiological and nuclear facilities, which has the potential to overlook work planning and control review of industrial activities.

DOE Action	Deliverable	Due Date	Owner/Org
1. A DOE-ORO-EM Technical Assessment of Work Planning and Control of Construction and Industrial Activities at BJC has been scheduled for spring 2006. This review will include the Work	1. Assessment Report and Corrective Action Plan	6/30/2006	Nuclear & Operations Safety Performance Team Lead

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Planning/Work Control CRADs.			
2. CRADs for Work Planning/Work Control provided to the Facility Representative group for inclusion in FR surveillances.	Surveillances including WP&C CRADs	3/31/2006	Facility Representative Group Team Lead

Responsible Manager: DOE ORO EM Technical Support and Assessment Division Manager

Opportunity for Improvement #2

The ongoing Type B investigation will result in corrective actions.

DOE Action	Deliverable	Due Date	Owner/Org
1. Prepare Corrective Action Plan and submit to HQ for approval	1. Corrective Action Plan		Nuclear & Operations Safety Performance Team Lead
2. Update this Site Action Plan with corrective actions and submit to HQ.	2. Updated Site Action Plan		Nuclear & Operations Safety Performance Team Lead

Responsible Manager: DOE ORO EM Technical Support and Assessment Division Manager

SECTION II – Bechtel Jacobs Company, LLC (BJC)

Performance Objective WPC-3: Work Control Program Documentation – The contractor has developed an effective work planning and control process.

No opportunities for improvement noted at this time.

Performance Objective WPC-4: Work Planning and Control Activity; Definition and Hazard Activity – Proposed work activities are adequately defined and analyzed to identify hazards and their associated controls.

Opportunity for Improvement #1

The DOE ORR for the K25/27 High Risk Equipment and Other Process Gas Equipment Removal identified several hazard analyses that had not been adequately completed.

BJC Action	Deliverable	Due Date	Owner/Org
1. Review and update all appropriate project hazard analyses. Implement all corrective actions for unsafe conditions.	<ul style="list-style-type: none">• Revised project Startup Plan to include preparation of lift plans to move heaviest process equipment;• Reviewed and revised AHA 2005-03001 to address all identified issues;• USQD for Handheld Weapons Change for Security Force at K25/K27 Facilities;• Applicable AHAs revised to include Arc Flash Hazard and applicable controls";• Developed implementation plan to incorporate NFPA 70E in project activities;• All identified unsafe conditions corrective actions completed.	11/17/2005 Complete	K25/K27 Manager of Projects

Responsible Manager: K25/K27 Manager of Projects

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Performance Objective WPC-5: Work Planning and Control Process – The contractor work planning process generates work control documents that lead to safe and efficient completion of work activities.

Opportunity for Improvement #1

Although processes and procedures are in place that should assure an effective work planning process, work packages are often not adequate in defining the work instructions needed for safe and efficient performance.

BJC Action	Deliverable	Due Date	Owner/Org
1. An Independent Assessment of Work Control will be completed by BJC Field Services with support from BJC QA. Approximately 300 work packages, will be reviewed by teams of subject matter experts. Teams will interview planners, field engineering, supervisors and craft for a selection of the packages.	1. BJC-IA-06-002, Independent Assessment of Work Control	2/24/2006	Field Services Manager
2. K25/K27 work packages were reviewed and revised based on problems identified during the MSA and ORR.	2. Revised K25/K27 Work Packages	11/16/2005 Complete	K25/K27 Manager of Projects

Responsible Manager: Field Services Manager

Opportunity for Improvement #2

The DNFSB visit to an ORO-EM project found that the process used to identify and analyze the hazards associated with the planned work was not adequate to ensure that appropriate controls would be in place to protect workers. The prepared work instructions required significant improvement to enable safe and successful accomplishment of the sampling and characterization.

BJC Action	Deliverable	Due Date	Owner/Org
1. BJC prepared an Operational Development Plan that adds rigor, formality and documentation to ensure the radiological basis and controls are accurate and easily implemented by workers. It includes a Proof of Process, a Practice phase and an expanded Mockup with training.	1. Operational Development Plan, training records.	Complete	MV Manager of Projects
2. The AHA was streamlined and focused by placing general hazards into a separate section and emphasizing those hazards specific to each work step.	2. Revised AHA	Complete	MV Manager of Projects

Responsible Manager: Melton Valley Closure Project Manager of Projects

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Performance Objective WPC-6: Work Planning and Control Oversight – Contractor personnel perform work in accordance with approved work control documents.

Opportunity for Improvement #1

Numerous deviations and inadequate practices were noted during the implementation of work instructions during the DOE ORR for the K25/27 High Risk Equipment and Other Process Gas Equipment Removal.

BJC/DOE Action	Deliverable	Due Date	Owner/Org
1. K25/K27 Project performed a causal analysis of this issue and held Supervisor/Personnel meeting to discuss and reinforce stop work authority and adherence to work package steps.	1. Causal analysis; Supervisor/Personnel meeting attendance rosters and agenda, validation checklists and attendance roster for standing work packages.	11/16/2005 Complete	K25/K27 Manager of Projects
2. Perform followup DOE reviews of project work practices will be conducted. WP&C CRADs will be incorporated into these reviews.	2. Review reports	3/31/2006	DOE Facility Representatives and Subject Matter Experts

Responsible Manager: K25/K27 Manager of Projects

Opportunity for Improvement #2

During the DOE ORR for K25/27, pre-job preparations were found to be inadequate for some work operations.

BJC/DOE Action	Deliverable	Due Date	Owner/Org
1. K25/K27 Project performed a causal analysis of this issue and held Supervisor/Personnel meeting to discuss and reinforce stop work authority and adherence to work package steps.	1. Causal analysis; Supervisor/Personnel meeting attendance rosters and agenda, validation checklists and attendance roster for standing work packages.	11/16/2005 Complete	K25/K27 Manager of Projects
2. Work packages were revised to add step to ensure work area is properly set up and daily operational checks are performed.	2. Revised work package	11/16/2005 Complete	K25/K27 Manager of Projects

Responsible Manager: K25/K27 Manager of Projects

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Performance Objective WPC-7: Work Planning and Control Oversight – The contractor has an established process that requires line management and assessment personnel perform timely assessment/surveillances of the work planning and control process, including periodic reviews of active and in development work control documents.

Opportunity for Improvement #1

BJC management presence in the K-25 Building work area is not adequate to assure that safety roles and responsibilities are effectively accomplished. BJC-GM-1400, *Integrated Safety Management System Description*, states “Line Management is responsible for the safe and efficient conduct of work to ensure protection of the public, the workers, and the environment.”

BJC Action	Deliverable	Due Date	Owner/Org
1. K25/K27 Manager of Projects distributed management expectations for increased sustained presence and involvement of managers at the work locations.	1. Manager of Projects Senior Field Oversight Expectations for the K25/K27 Project, "Management Walk-About"	11/7/2005 Complete	K25/K27 Manager of Projects
2. BJC will develop a management tool to make the Manager of Projects and functional managers accountable for their management assessments and encourage them to be proactive in self-identification of issues. Management assessment schedules are to be discussed at the BJC President's staff meeting where the MOPs and functional managers will report on management assessments scheduled, results, and effectiveness of corrective actions on a quarterly basis.	2. Management tool and meeting minutes from President's staff meeting.	4/30/06	BJC Quality Assurance Manager

Responsible Manager: BJC QA Manager

SECTION III – Foster Wheeler Environmental Corporation (FWENC)

Performance Objective WPC-3: Work Control Program Documentation – The contractor has developed an effective work planning and control process.

No opportunities for improvement noted at this time.

Performance Objective WPC-4: Work Planning and Control Activity; Definition and Hazard Activity – Proposed work activities are adequately defined and analyzed to identify hazards and their associated controls.

Opportunity for Improvement #1

Personnel were observed operating a personnel lift within close proximity to an energized electrical line without appropriate controls in place.

FWENC Action	Deliverable	Due Date	Owner/Org
Stop work initiated and alternative means evaluated and used.	Stop work order.	12/31/2005 Complete	TRU Project General Manager
Charter a Safety Conscious Work Environment Group to evaluate related issues and make recommendations.	Working Group Charter	12/31/2005 Complete	TRU Project General Manager

Responsible Manager: TRU Project Operations Manager

Performance Objective WPC-5: Work Planning and Control Process – The contractor work planning process generates work control documents that lead to safe and efficient completion of work activities.

Opportunity for Improvement #1

Several procedural discrepancies were noted during the DOE ORR which ranged from failure to flow down a requirement to inaccurately describing a requirement.

FWENC Action	Deliverable	Due Date	Owner/Org
Review and revise procedures. Designate Cognizant	Revised procedures	11/10/2005	TRU Project General

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Engineer as appropriate.	Notification designating Cognizant Engineer	Complete	Manager
Train to revised procedures.	Training records	11/10/2005 Complete	TRU Project General Manager

Responsible Manager: TRU Project ESH&QA Manager

Opportunity for Improvement #2

Current glove box design and operational practices are not sufficient to ensure contamination control and minimal worker exposure to contamination during the drum insert process to the glove box line in the Process building

FWENC Action	Deliverable	Due Date	Owner/Org
Design, procure, and install flexible air lock	Drawing and completed work order	12/12/2005 Complete	TRU Project General Manager
Revise RWP to account for flexible air lock	Revised RWP	12/12/2005 Complete	TRU Project General Manager

Responsible Manager: TRU Project Deputy Project Manager

Performance Objective WPC-6: Work Planning and Control Oversight – Contractor personnel perform work in accordance with approved work control documents.

No opportunities for improvement noted at this time.

Performance Objective WPC-7: Work Planning and Control Oversight – The contractor has an established process that requires line management and assessment personnel perform timely assessment/surveillances of the work planning and control process, including periodic reviews of active and in development work control documents.

No opportunities for improvement noted at this time.